

AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A catalytic secondary reforming process, for the production of synthesis gas, the process comprising the successive steps of:

feeding a first gas flow comprising hydrocarbons and a second gas flow comprising oxygen into a reforming reactor, said gas flows being fed into said reactor in a predetermined feed direction substantially coaxial, to a longitudinal axis of said reactor, wherein said first gas flow comprising hydrocarbons and said second gas flow comprising oxygen are kept separate and coaxial from one another for an initial portion of said reactor;

imparting a rotating swirling motion about said predetermined feed direction to at least one of said gas flows; and

mixing said gas flows in said reactor downstream of said initial portion of said reactor, said hydrocarbons of said first gas flow being with substantially simultaneously oxidation of oxidized the hydrocarbons of said first gas flow by the oxygen of said second gas flow during the mixing of the gas flows, wherein said step of mixing said gas flows takes place by imparting a rotating swirling motion about said predetermined feed direction to at least one of said gas flows, and wherein said mixing step takes place downstream of said initial portion of said reactor.

2. (Previously Presented) The catalytic secondary reforming process according to claim 1, wherein said rotating swirling motion is imparted to said second gas flow comprising oxygen.

3. (Cancelled)

4. (Currently Amended) The catalytic secondary reforming process according to claim 1, wherein said second gas flow comprising oxygen is inside and coaxial to said first gas flow comprising hydrocarbons.

5. (Currently Amended) The catalytic secondary reforming process according to claim 2, wherein a rotary swirling motion is given to said first gas flow comprising hydrocarbons, said rotary swirling motion of said first flow being in an opposite direction with respect to said rotary swirling motion of said second flow.

6. (Currently Amended) The catalytic secondary reforming process according to claim 1, wherein said mixing step takes place by giving both gas flows a rotary swirling motion about said predetermined feed direction, the rotary swirling direction of said first flow being in an opposite direction with respect to the rotary motion of said second flow.

7-14. (Cancelled)